*Small-scale Forest Economics, Management and Policy*, 4(3): 229-250, 2005

# Community Forests in Baden-Württemberg (Germany): A Case Study for Successful Public-Public-Partnership

Christoph Hartebrodt, Thomas Fillbrandt and Helmut Brandl
Department of Forest Economics
Forest Research Institute, Baden-Württemberg
79100 Freiburg, Germany

This paper examines the current situation and future prospects for community forestry in the south-west of Germany. A classification of functional types of community forests and a unique form of forest administration as an appropriate reaction to the intensive mixture of ownership types are explained. In most cases institutional support is more important than direct measure-related subsidies. The results of customer satisfaction analysis and indicators including participation in the state ranger system provide evidence that the model of Public-Public-Partnership (PuPuP) has proved successful. The role of various forest functions in the individual community is highlighted. High productivity in community forests, increasing wood consumption in the housing sector and increasing use for energy production suggest favourable prospects for community forestry in Baden-Württemberg. Equally important are efforts to increase technical efficiency of production. Improved stakeholder communication can result in a better perception of the importance of forestry. The paper also identifies relevant threats to community forestry. The increasing cost-price squeeze is one of the crucial risks for communal forest enterprises. Additionally, an anti-trust campaign of the timber industry endangers their market position. A reorganisation of the state forest administration will result in a lower level of financial and institutional support.

**Keywords:** integrative forest administration, community forestry, forest functions in communal forests, future opportunities and threats of community forests

## INTRODUCTION

The relationship between state authorities and communities varies considerably and is often an uneasy one. The German constitution gives communities the right of self-administration (Grundgesetz 1949, Art. 28, Abs. 2). The constitution of the state of Baden-Württemberg (BW) refers to the subsidiarity principle (Verfassung von Baden-Württemberg 1953). Nevertheless, during the last three decades many competences have been concentrated on the national and state level. The increasing importance of European law has resulted in a loss of competences at the community level as well. At present there is continuing discussion in Germany concerning the

level at which government decision-making should be mainly located. Concepts of the federal government for alleviating the competences in terms of transfer of competences back to the state and municipal authorities have been introduced (BMI 2001). The common trend is to foster the *subsidiarity principle*, which results in an allocation of decision-making on the lowest feasible level of administration. This will potentially enlarge competences and responsibilities of the local communities inside and outside the forest sector.

The Public-Private Partnership (PPP) model provides a new approach for the organisation of public duties mainly located on the local level. It is defined as a risk-sharing relationship between the public and private sectors based upon a shared aspiration to bring about a desired public policy outcome (Wegener 2003). PPP plays an increasing role in Europe. The 'Green Paper on Public-Private Partnerships and Community Law on Public Contracts and Concessions' states that '… the PPP phenomenon developed in many fields falling within the scope of the public sector', (EU 2004). The benefits of these new arrangements are not undisputed. The International Monetary Fund (2004) concluded, concerning the efficiency of PPP, that 'the theory is ambiguous and the empirical evidence is mixed.' The PPP approach competes with other forms of institutional arrangements. Besides total privatisation, the cooperation between public institutions, widely discussed as PuPuP, can be found as a feasible approach in different countries (PSIRU 2005).

State-owned forest enterprises play an important role in southern Germany. Long before models like PPP and PuPuP were invented in general, a special form of cooperation between different public administrations had been introduced to the forest sector in BW. Thus it can be stated that the cooperation of communities and the state forest administration is one of the first PuPuP in BW. The literature of both, PPP and PuPuP, contains extensive discussion on the benefits of such cooperations (e.g. Budäus *et al.* 1998, IMF 2004, PSIRU 2004, Syncwork 2004). Most authors emphasise the following five positive outcomes:

- knowledge-transfer
- benchmarking between institutions
- cost-reduction
- increase in productivity
- process-innovation.

The paper examines the development of the forest PuPuP in BW, and provides detailed insights into how this model developed in the context of the forest history in BW. On the basis of a case study in BW, a detailed analysis is provided of the most important aspects, including legal provisions, administrative structures and special community-related measures, using the outcomes listed above as criteria for an assessment of this special kind of institutional arrangement.

Such a specific model cannot be presented as a feasible solution for other countries, but it can be used in terms of a toolbox, containing useful components for establishing cooperation models. This paper, providing information on several aspects of the role and effectiveness of government support and subsidies, can therefore be understood as a contribution to some of the more important topics listed by Harrison *et al.* (2002), namely 'community forest initiatives, role and

effectiveness of government support and subsidies and enhancing returns from non-wood forest products'.

## RESEARCH METHOD

Information has been collated from various sources, including unpublished research findings, and concepts and information have been synthesised to develop new insights into forest administration. The historical framework and details of information concerning the current uses, institutional arrangements and present industry situation rest upon an intensive literature search, which also includes an evaluation of the body of relevant forest laws in BW. Additional information is derived from the annual reports of the state forest administration.

Customer satisfaction analysis is commonly used to evaluate the relationship between clients and service providers. During the last five years, two surveys were carried out to evaluate the level of satisfaction of communities in two of the most relevant areas of forest management. In 1998, 100 communities were interviewed in a quantitative survey using market research methodology concerning their satisfaction with the marketing offers of the forest administration (Compagnon 1998, Joos and Hartebrodt 2001). In 2000-01 the service activities of the forest administration after a catastrophic storm event were evaluated in a qualitative survey amongst private and community forest owners (reported by Hartebrodt 2004a). Information on the physical and economic performance of community forestry in BW has also been obtained from a long-term accountancy network (known as BMVEL-Net).

## HISTORICAL DEVELOPMENT OF COMMUNITY FORESTS

Forests owned by communities (villages, municipalities, cities and special cooperatives) are one of the three main types of forest ownership in Germany, along with private and state forests. Community forests are concentrated mainly in the south-western region of Germany. Separate paths may be identified for development of community forests in rural areas and in urban areas in BW. Each case is now discussed.

### Development of Community Forests in Rural Areas

In order to find the origins of this special type of ownership in rural areas, it is necessary to go far back in German history. After the end of the Roman empire (250 – 350 AD), the existing structure of settlements and of government in Germany and France was destroyed by the migration (4th to 6th century AD), when German tribes left their original settlement areas in eastern Europe and moved westward. The population in these traditional settlement areas was frequently displaced. Compared to the Roman period, the population was reduced to less than 50%, and most existing villages, cities and Roman estates were destroyed. With the beginning of the 6th century, a period of resettlement and colonisation commenced because the various German tribes ceased migration and settled. A rural society was established and living was organised in rural villages. This period of establishing and

consolidating a new permanent settlement in Germany required 200 - 300 years. By about 1000 AD, colonisation had occurred in all regions with fertile soils and favourable climatic and structural conditions. Most of the existing rural villages were founded during this time. Only the larger low mountain ranges remained unsettled, including, for example, the Black Forest (Abel 1962, Boelcke 1974).

These new settlements needed a range of products from the surrounding forests for their existence, including fuelwood, timber for house building and crafts, and food for cattle. During these times farmers were more or less controlled by the landowners, mainly noblemen or the church. In contrast to the marketplaces and towns, the rural villages had no rights to establish self-government structures of any kind. The use of the forests by farmers was organised in a common way; all decisions on the use of the various kinds of forest products (in terms of volume and extraction time) were made by the community. In the establishment period, a village was a community of settlements and an economic association, which aimed to regulate common interests, but always under the supervision of and depending on the acceptance of the landholder (Bader 1957, 1962, Abel 1962).

During the 10th and 11th century AD, the villages established a special organisation for all questions of their common rights – the so-called *Markgenossenschaft*. This association controlled all rights and regulations on the common use of the forests, as well as on other common-use land. Throughout the centuries, these Markgenossenschaften had to fight for their independence against local and regional authorities – including nobility, monasteries, abbeys, towns and foreigners – who claimed special rights and the control over common-use forest areas. In fact, all types of possible rights of such Markgenossenschaften can be found, from complete independence with full rights for self-administration through to total dependence on a higher authority (Kroeschell 1972, 1973, Brandl 1973).

This system of common use of forests by the farmers in a village lasted for several centuries. At the beginning of the 15th century, a radical change commenced with the introduction of Roman legal concepts in Germany. These ideas strongly influenced the position of both villages and Markgenossenschaften regarding the use of forests. The rights connected to ownership became more important compared to the earlier German common property rights. At the same time, a stronger differentiation took place between ‘public law’ and ‘civil law’. As a consequence of the public law, the villages, which had been a more or less informal association of all inhabitants up to the 16th and 17th century, became legal entities with several connected rights – including the right of ownership. The question of who owns a particular forest area became increasingly important and the old German rights to use forests in a common way was more and more regarded as a hindrance on the way to establishing clear conditions regarding the possibility of full entitlement for disposal of forests. Thus it came to a clearing up between the rights of users and the rights of owners. The final clarification took place in the 18th and 19th century. Two different ways of treatment were established for all forests which had been used in common by villages or special associations such as Markgenossenschaften (Mantel 1933, Wellmer 1938, Bader 1957, 1962, Brandl 1973):

1. The common-use forest area was divided and granted to traditional users of forest products, according to the volume of historical use. In this way, mainly in middle and northern Germany, large areas of private forests were established.

The often high numbers of entitled persons and the law of inheritance (the property was split up among the children), gave rise to the present small-scale private forests in these regions.

2. Particularly in south-west Germany, entire forests controlled by associations were given to the political community, which consisted of the whole body of communal authorities – the mayor, village council and the administration – following public law. Each village or town and their authorities had the full right of disposal, while the farmers lost all rights, though normally receiving compensation in the form of money or as an annual timber allocation. Later these timber quota rights were withdrawn, and also compensated with money. This was the way in which community forests, mainly of villages, developed in rural regions.

The forests in the ownership of rural villages or smaller rural towns, which had their origin in common use of forests around rural settlements by farmers and other entitled persons (Markgenossenschaft) passed to full ownership rights by the villages in the late 18th and 19th century.

**The Development of City Forests**

Development of urban community forests took a different path to that in rural villages. For a period of 200 to 300 years, from about the 11th century AD, there was a wave of newly founded towns throughout Germany. The towns were founded as a new type of settlement with a market place, with walls for protection and with a new social structure. The founder of such a new town gave special rights and privileges to the settlements and their inhabitants, e.g. the right to own armed forces, to own a mint, and to impose taxes, tolls and other fees. Initially, a new town had only as much sovereignty as the highest authority above the town parliament and other self-governing bodies. However, the development of the economy and the increasing wealth of the leading families in the towns led to growing independence from all former authorities. Often only a formal superiority remained, the town gaining full independence from the local reigning families and achieving the protection of the emperor as *Reichsstadt* or 'town of the empire' (Brandl 1973).

These rich and independent municipalities had a completely new understanding of forest rights. With the foundation of such a town, a forest area where the citizens could use the various forest products was an urgent necessity. Normally the founder of the town transferred the right to use a specific forest area around the town to the town authorities. Soon the town claimed the complete ownership over this forest area, and in most cases the claim was successful. In other cases, the town purchased forest areas from the ruler of a territory. The decisive objective for the authorities of such independent municipalities was to achieve the entire ownership over forest areas. As a result these towns possess written documents showing the unrestricted ownership over their forests in the 14th and 15th century AD. City councils often claimed all rights to regulate the use and the management of their city forest – while the citizens had no original rights to use forest products (Conrad 1954, Brandl 1970, 1973, Kroeschell 1972, 1973, Prange 1973).

## CURRENT USES OF COMMUNITY FORESTS

Community forest functions and the use of these functions vary greatly throughout BW, as illustrated in the classification of community forestry by Gröbl (1994), presented in Table 1. There is no information on the spatial distribution of the single use of these individual functions, but a comparison of the minimum, average and maximum share of the outlay on the basis of BMVEL-Net-data can be used as an appropriate indicator of this variation. As indicated in Table 2, the relative importance of protection and recreation functions varies enormously; comparing the average and maximum shares, there are communities with an almost 10-fold rate in the protection function and a 5-fold rate in the recreation function. On the other hand the comparably high average and minimum share of the production function underlines that there is still a high dependency on this traditional forest function.

**Table 1.** Functional types of community forests in BW

| Functional type | Characteristics |
|---|---|
| Rural communities | Greater importance of the production function of the forests on the communal budget (receipts or costs of the forest sector) |
| Industrialised communities | Production function and budget function is less important or insignificant. Other functions are of lower interest as well |
| Congested urban areas | Recreation and protection function dominate. Willingness to finance these functions out of the communal budget is mostly given |

Source: Adapted from Gröbl (1994).

**Table 2.** Share of the annual outlay on the individual forest functions of community forests in BW, financial year 2003

| Forest function | Share of outlay (%) | | |
|---|---|---|---|
| | Minimum | Average | Maximum |
| Production | 49 | 83 | 100 |
| Protection | 0 | 3 | 25 |
| Recreation | 0 | 4 | 20 |
| Other functions | 0 | 10 | 52 |

An important function of forests in BW is to provide a traditional and attractive landscape to support the tourism industry. Almost 50% of the overnight tourist stays in the state are concentrated in the Black Forest. The southern Black Forest is particularly appealing, with nearly twice as many stays as the middle part and about 40% more than the northern part. Table 3 summarises visitation levels in the Black Forest and other less forested regions in BW for the year 2002. In general it can be stated that tourism in BW amounts up to 5% of the state GDP (Landtag von Baden-Württemberg 2002).

**Table 3.** Number and share of overnight stays in different regions of BW

| Region | Number of overnight stays (1000) | Share of overnight stays (%) |
|---|---|---|
| Southern Black Forest | 8040 | 20.5 |
| Middle part of the Black Forest | 4432 | 11.3 |
| Northern Black Forest | 5784 | 14.7 |
| Total for Black Forest | 18256 | 46.5 |
| Neckar and Suebian Region | 15217 | 38.7 |
| Lake Konstanz Region | 5817 | 14.8 |
| Total for BW | 39290 | 100.0 |

## BADEN-WÜRTTEMBERG FORESTRY INSTITUTIONAL ARRANGEMENTS

### Special Patterns of Ownership Types and Consequences for Forest Administration

A special characteristic of forestry in BW is an intensive mixture of all types of ownership. Figure 1 provides an overview of these patterns. This distribution created the need to build up an organisation responsible for all property types in terms of using synergistic effects and thus reducing administrative outlay. This so-called integrative forest administration is a suitable solution even for the structural drawbacks in community forestry. The average size of the community forests is less than 500 ha, with an average annual cut per community of approximately 4000 $m^3$. Size and cutting volume often do not constitute a viable forest enterprise in these times of globalising timber markets.

### Reorganisation and Continuity in Forest Administration

Due to decreasing public budgets, the state government recently initiated a reorganisation of the forest administration, the central features of which are 'harmonising the structures of the administration in all areas' and 'subsidiarity'. The forest offices at the local level were hived off the state forest administration to become part of the county administration, from the beginning of 2005. During this process of reorganisation the counties are obliged to reduce the annual costs for administration by 20% until the year 2012. In spite of this fundamental reorganisation of the forest administration, the legislators decided to maintain the structure of the integrative forest administration even on the county level, which now plays the most important role in forest administration (see Figure 2).

Most parts of the general and forest administration have a hierarchical structure consisting of three levels. Each portfolio is lead by a ministry, which for the forest sector is the Ministry of Food and Rural Areas, located in the state capital Stuttgart. The state of BW is divided in four regions. Each is led by a general agency, called Regierungspräsidium (RP). In the past the forest administration formed an exception. The middle-level administration was split in only two agencies, the so-called forest directorates (FD). This structure remains, because two of the RP's strongly are responsible for the whole forest sector.

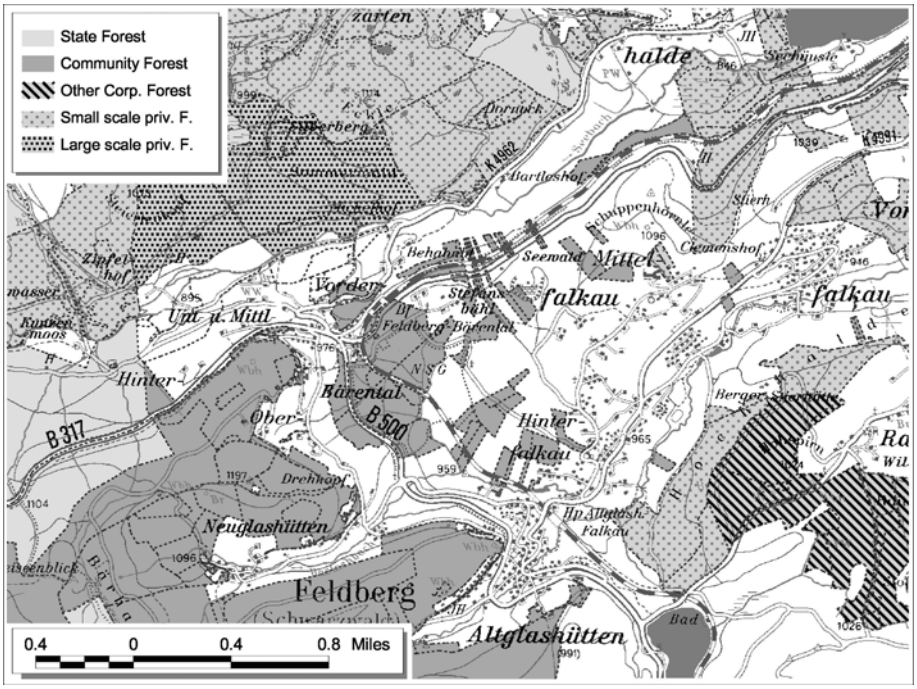
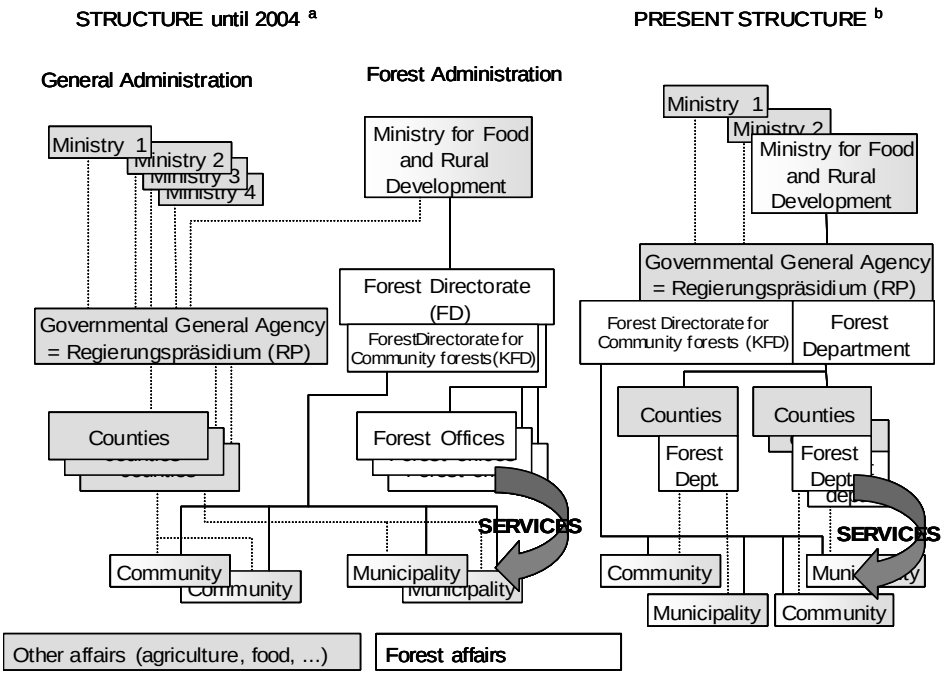



**Figure 1.** Intensive mixture in spatial patterns of ownership classes in BW

The most important change is that the former independent position of the forest administration is relinquished. The new structure results in a loss of influence, but it is not yet possible to make an evaluation of the full consequences of this change.

A peculiarity existing only in BW (in the former and new structure) is a participatory authority formed by representatives of the communities and members of the RP. The so-called community forest directorate (Körperschaftsforstdirektion or KFD) is responsible for the implementation of all laws, as well as approval processes and prosecutions, in community forests. The KFD is comprised of three representatives of communities or municipalities, three members of the forest department and one non-forest member from the RP. As a confidence-building measure, the non-forest members constitute the majority in this organisational unit.

In the new structure in BW, 44 forest departments or sub-departments exist at the lowest level. They are part of the county administration and most of them are lead by a forest officer. The former structure of the forest administration was characterised by more or less equal responsibilities, whereas the new, county-based structure will show considerable variability, an unavoidable consequence of the reorganisation.




a. Generalised depiction; there are some other exceptions from the structure of the general administration police and school administration.
b. A few exceptions remain; most parts of the administration have been aligned with general administration.

**Figure 2.** Former layer structure of forest and general administration in BW and new administration structure from 2005

**Legal Provisions as a Precondition of the Cooperation**

Because of the great importance of community forestry in BW, there are detailed legal provisions for the cooperation between the state forest administration and the communities. The most important sources of information about legal provisions drawn on here are the *State Forest Act* (*Landeswaldgesetz* or LWaldG 1995) and an administrative regulation for community forests (*Körperschaftswaldverordnung* or KwaldVO 1978). Where no other source is mentioned, statements concerning legal provisions refer to these two sources.

Most of the responsibilities are concentrated in the forestry departments of the counties. The LWaldG rules that, if there is no other legal provision (described in the subsequent list) within the *State Forest Act*, the counties, represented by the county chief executive and the county council, are responsible. In most counties these tasks are delegated to the county forest departments (Table 4).

**Table 4.** Legal provision of competences of the forest authorities in BW [a]

| Ministry | Forest Directorates (FD) and Forest Directorate for communities (KFD) | Forest departments or sub-departments at county level |
|---|---|---|
| Preparation of forest legislation by the parliament | Conversion of forest stands to other purposes (§ 9 LWaldG) | Approvals of partitioning of forest estates and plots (§ 24 LWaldG) |
| Administrative fiats (LWaldG § 53 | Declaration of forests for special protection purposes (§ 31 LWaldG) | Control of land servitudes |
| | Declaration of protected forests (§ 32 LWaldG); agreement of the owner of the forest land is needed | Approval of special recreation facilities (§ 34 LWaldG) |
| | Approval of extraordinary timber harvest (exceeding the prescribed 10 year cut in the period of the 10-year forest management plan (§ 52 LWaldG) | Technical management support (§ 47 LWaldG) |
| | Forest management plans for communities (LWaldG § 50) | Forest ranger services (§ 48 LWaldG) |
| | Supervision of forest owners (communities)[b] | Annual management plans (KWaldVO) |
| | | Forest consulting; subsidiary programs; land and forest use planning; protection of forests |

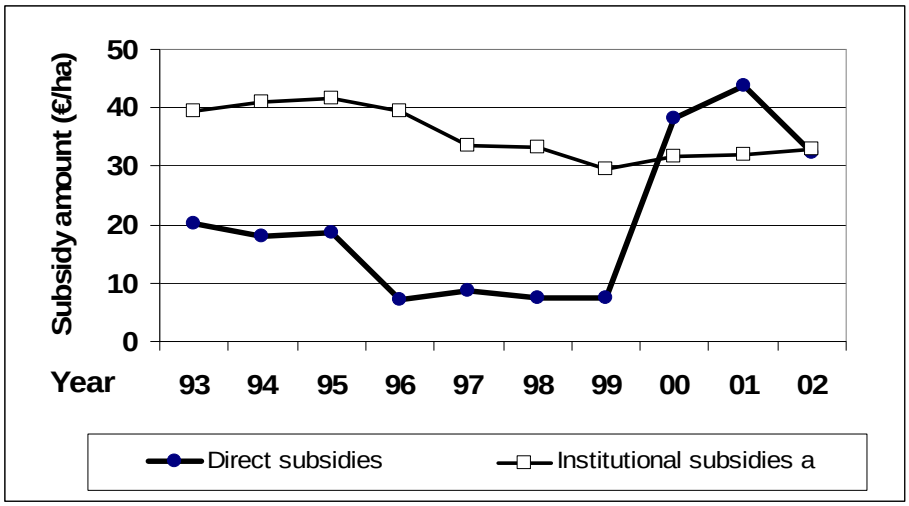
a. The sections marked with § refer to the present legislation, because the new *State Forest Act* was not finalised at the time of writing.
b. Private forest owners are supervised by their county forestry department.

**Amount of Institutional Support and Direct Subsides**

From immediately after Word War II, institutional subsidies by the state supported the community's cash balance. From the early 1960s, direct (measure-related) subsidies gained increasing importance. Presently, state subsidies avert the need for many forest enterprises to receive subsidisation by the community budgets.

Analysis of data from the accountancy network reveals that the importance of direct subsidy programs is much lower than the importance of the institutional support offers. The amount of the financial subsidies in the proceeds only exceeded 10 €/ha (about 2% of the total proceeds) during periods when the government spent considerable amounts on reafforestation and other silvicultural measures, primarily as a result of storm damage (i.e. in the years 2000-2002). The so-called 'non-covered (or free) services' amount to approximately to 35 €/ha, four times as much

as the direct subsidies. A time series of direct subsidies and non-covered services is presented in Figure 3.




a. The most important component is technical management.

**Figure 3.** Amount of institutional and direct subsidies for community forests in BW, 1993-2002

The state forest administration offers three levels of administrative support for all property types, including communities, namely technical management, ranger services and managerial services**.** Technical management – including forest mid-term and annual management planning, and the preparation, organisation and control of silvicultural operations – is provided free of charge for all communities. Communities may undertake this function themselves, but only four of about 1100 communities have decided to build up a management organisation of their own.

The individual community may employ a municipal ranger or participate in the state forest ranger system. Even though a charge is made for participation, about 75% of the communities take part in the state ranger system. Duties of the forest rangers include, among other things, operational planning and control of silvicultural operations, coordination of forest workers and contractors, and timber marking and measuring. The fee currently amounts to 6.45 € per cubic metre of annually prescribed cut (with an upper limit of 51.6 €/ha), which is the more cost-effective solution for most communities (Forstverwaltungs-Kostenbeitrags-Gesetz 1994). Most of the communities use the managerial services as well. The most important component of this service is the selling of timber from the municipal forest. The joint marketing opportunity allows even small communal enterprises to participate in the long-term timber contracts of the state forest enterprise. This service is priced at 1.50 €/$m^3$ of log timber.

**Indicators of Client Satisfaction**

It might be argued that the cooperation between state forest administration and the communities is mainly related to legal provisions, but there is evidence that the

cooperation is a result of mutual benefits and high client satisfaction. One indicator is the high proportion of communities that have joined the state ranger system. The area covered by the state ranger system increased from about 150,000 ha in the early 1960s to about 400,000 ha today (Table 5). This development provides a combination of financial and non-financial advantages. The communities are aware of the benefits of a well-developed information and education system of the state forest administration, and few have re-established a municipal ranger system.

**Table 5.** Time series of use of the state ranger system in BW

| Year | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 | 1995 | 2000 | 2002 |
|---|---|---|---|---|---|---|---|---|---|---|
| Usage area (1000 ha) | 145 | 183 | 240 | 306 | 342 | 373 | 392 | 409 | 402 | 409 |

The analysis of the marketing offers reveals that there is an extremely high general satisfaction (Compagnon 1998). Table 6 provides an overview on the general satisfaction concerning the most important areas of marketing cooperation between the state-owned forest enterprise and the communities during the last five decades.

**Table 6.** General satisfaction of the communities with the state-offered marketing services in BW

| Service area | Evaluation rating[a] |
|---|---|
| Information and consulting offers | 1.5 |
| Compliance with rules and special demands of the community | 1.4 |
| Financial results | 1.9 |

a. A score of 1 represents the highest customer satisfaction, through to 4 for very low satisfaction.

About 90% of the communities interviewed indicated that they make use of the marketing services offered by the state forest administration. The benefits identified as most important are the professional competence (51%), a better position in the timber markets (28%), more labour-efficient marketing procedures (27%), and the high quality of the service of the forest offices (19%). Concerning the information policy of the state-offered marketing organisation, the velocity of the information flow (66%) and the quality of the information provided by the members of the state forest administration (31%) were highly regarded. It is obvious that personal contacts between representatives of the communities and the state forest service play an important role even in the marketing cooperation between the individual community and the administration (54%). It is notable that the communities characterise the marketing organisation as being flexible and willing to accommodate the special demands of the communities (60%). In a spontaneous survey during the first forest summit meeting in BW in 2004, 100% (of about 50 persons) stated that a joint marketing system is the best solution to timber marketing for all forest owners.

Similar results were obtained when analysing the satisfaction of the communities after the storm in 1999. In most cases the representatives of the communities

expressed a high level satisfaction with the performance of the state forest service during that period (Hartebrodt 2004a, LFV 2004), especially the information policy. In most cases they stated that they had decided to give all responsibility to the forest offices as a result of the professional competence of the forest administration.

Dinkelaker (2000) examined the role of the communal forests in the context of communal policy. On one hand he provided evidence that the representatives perceive the overwhelming influence of the state forest administration, and on the other hand, he stated that the representatives of the communities are mostly (84%) satisfied with their present participation in decision-making.

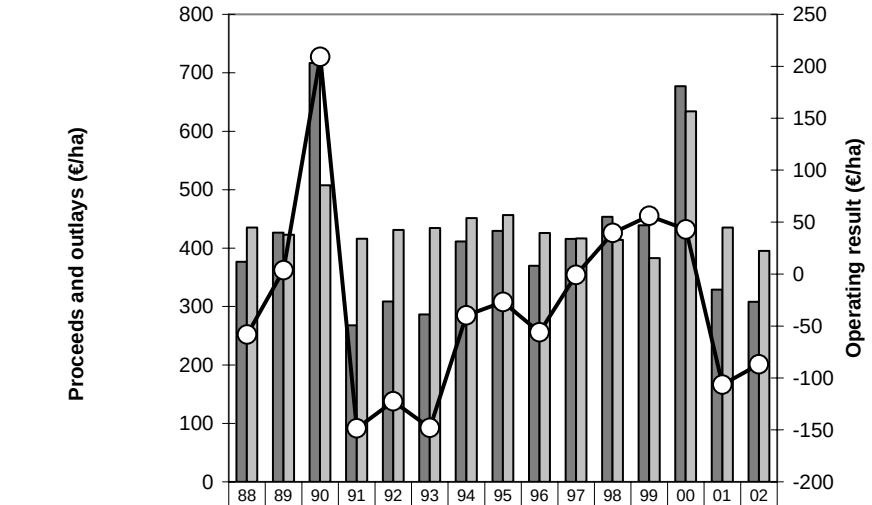
## FINANCIAL PERFORMANCE OF COMMUNITY FORESTS

The BMVEL-Net is part of the agricultural reporting system, called 'Agricultural Report' of Germany. Since 1976 the survey has included community, private and state forest enterprises in Germany. The intention has been to obtain actual and representative data on the economic situation of forest enterprises of more than 200 ha. The number of enterprises participating in the BMVEL-Net in BW is of a size that allows data analysis on state level (85 community forest enterprises in 2003). Sekot (1990) provided detailed information on the methodology of the accountancy networks in Europe. Most of the following results are drawn from a more detailed annual summary of the results in BW (provided in FVA 2004). The same source provides more detailed insights into the contents and structure of the BMVEL-Net.

Most observers describe the economic situation in forestry in BW as more or less drastic. At present the absolute timber price is at a similar level to that in the 1950s, whereas wage costs have increased nearly 26-fold! Stenbock and Schaefer (1994) refer to the cost-price squeeze as a relevant reason for the increasing economic crisis.

Proceeds and outlays are two summary characteristics expressing the financial performance of an enterprise. Figure 4 illustrates the development of these aggregate parameters from 1988 to 2002. The values do not include direct subsidies and institutional support.

The timber market collapsed after the windthrow of 1990. Efforts to control bark beetles caused a high level of unregulated felling of Norway spruce from 1991 to 1993, and the price for timber after the 1989 windthrow event did not recover until 1994. This led to a negative operating result. After a short period of profitability towards the end of the 1990s, when global timber demand and prices were rising, the typhoon Lothar catastrophe in 1999 again resulted in a decrease of the operating result. The outlays and proceeds levels of Figure 4 are mean values based on the data of about 70 to 85 community forests. Despite the great variability between the financial parameters, from 1991 to 1996 and again beginning from 2001, most of the enterprises did not reach financial break-even.




| | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 00 | 01 | 02 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proceeds (€/ha) | 377 | 426 | 717 | 268 | 308 | 286 | 412 | 430 | 370 | 416 | 454 | 439 | 677 | 329 | 308 |
| Outlays (€/ha) | 435 | 423 | 508 | 416 | 431 | 435 | 451 | 456 | 426 | 417 | 414 | 383 | 634 | 435 | 395 |
| Operating result (€/ha) | -58 | 4 | 209 | -149 | -123 | -148 | -40 | -27 | -56 | -1 | 40 | 56 | 43 | -107 | -87 |

**Figure 4.** Proceeds, outlays and operating results of community forests in BW, excluding subsidies and support, 1988-2002

**New Structure of Data Collection in the Federal Accountancy Network**

During the last decade there has been an increasing variability in the operating results between community forest enterprises and also between enterprises of the different types of forest ownership. Because the variability is often caused by activities in the non-timber sector, the federal and the state ministries decided in 1998 to restructure the data collection of the BMVEL-Net. The annual survey is now carried out according to a product plan, with proceeds and outlays disaggregated according to product types or ‘ranges’, including non-timber activities. The aim is to generate more comparable data, for example in the operating result, and to achieve a higher degree of transparency (DFWR 1998).

The new structure yields information on the outlays and proceeds in five defined product ranges, as listed in Table 7. There is great variation between the enterprises concerning the proceeds, outlays and operating result. The operating result varies between a profit of 215 € and a loss of 455 €. The most important factor for the operating result in the product range is ‘timber production’.

Figure 5 indicates the relationship between operating result and felled volume. A variety of factors – including the proportion of high-price timber (particularly Norway spruce) and the costs of harvesting administration – affect the result. Sales from stock (timber felled in the preceding years) or placing timber into stock lead to a non-systematic bias which can be removed by a multi-year analysis. The influence of the natural productivity of the stands remains high.

**Table 7.** Proceeds, outlays and operating result of community forests in BW by product ranges, year 2003 (€/ha)[a]

| Product range | Proceeds | Outlays | Operating result |
|---|---|---|---|
| Timber production | 345 | 328 | 17 |
| Protection and restoration | 3 | 13 | - 10 |
| Recreation and environmental education | 2 | 20 | - 18 |
| Services on behalf of third | 19 | 30 | - 11 |
| Sovereign tasks | 1 | 4 | - 3 |
| Forest enterprise (all product ranges) | 370 | 395 | - 25 |

a. Estimates include direct and institutional subsidies.

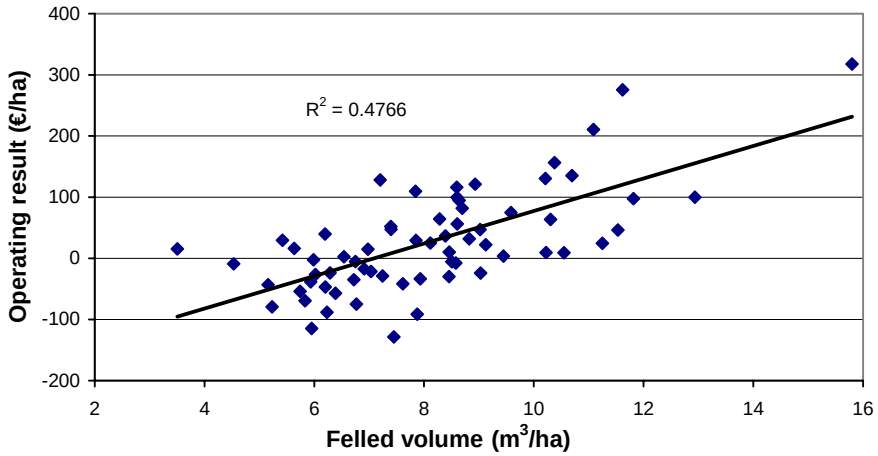



**Figure 5.** Felled volume and operating result in community forests – mean values 1996-1999 of 66 continuously participating community forest enterprises

## AN ASSESSMENT OF THE FOREST PUBLIC-PUBLIC PARTNERSHIP

As mentioned above, this cooperation model has to be evaluated in the framework of PPP and PuPuP theory. Table 8 gives an overview of the relevant benefits in terms of the most important outcomes of such partnership models. It is obvious that the cooperation provides benefits matching all outcome criteria. A comparison between the different models shows that the PuPuP model excels, especially with regard to the knowledge transfer and the extended benchmarking tools of the state forest administration. Cost reduction is especially notable in the field of timber marketing and in terms of the use of EDP Tools. The joint management is a suitable policy response to the high fragmentation of community forests in BW.

**Table 8.** The benefits of the cooperation model in terms of the main outcomes of PuPuP and PPP

| Outcome criteria | Relevant benefits for community forests | PuPuP | PPP | Privati-sation |
|---|---|---|---|---|
| Knowledge transfer | Velocity of information flow: | | | |
| | storm disaster | ++ | +/- | -- |
| | marketing offers | ++ | + | + |
| | Participation in the state forest information and education system | ++ | - | -- |
| | Support by the state-owned Forest Research Institute | ++ | + | - |
| Benchmarking | Benchmarking offers from the joint accounting systems and the accountancy network BMVEL-Net | ++ | +/ | +/- |
| Cost reduction | Use of joint EDP-tools | ++ | + | + |
| | Institutional support by different management services of the state forest administration | ++ [a] ++ | + | + |
| | Feasible administrational solution in answer to the high fragmentation and parcellisation even in community forests | | | |
| Increase in productivity | More cost-effective procedures concerning: | | | |
| | advanced timber marketing organisation | + | - | ++ |
| | participation in joint marketing activities | ++ | + | + |
| | better access to the timber markets | ++ | - | + |
| Process innovation | Support by the state-owned Forest Research Institute | ++ | - | -- |
| | Other process innovations (management) | +/- | + | ++ |

a. Institutional support is relevant only for the state forest administration.

A conclusion from Table 8 is that the well developed cooperation between the state forest administrations proved successful even under the framework of PPP and PuPuP theory. It is a feasible arrangement, but not the only alternative, to the framework of community forestry in BW.

## FUTURE PROSPECTS AND THREATS OF COMMUNITY FORESTRY

Various views on future management options for community forests have been reviewed by Stenbock and Schaefer (1994). Some proposed measures to deal with the financial crisis include selling off communal forests to private investors, ceasing the management of the forests, and providing financial compensation for the use of the forests in rural areas by the inhabitants of congested urban areas. Even payment for hunting rights is sporadically discussed. Deficits from communal forests can have substantial impact on community budgets. Schaefer (2002) pointed out that in Rhineland-Palatinate, which borders BW, the deficit amounts to 50 €/inhabitant/year. Hartebrodt (2004b) demonstrated that the deficit

between the total outlay and total proceeds has been progressively increasing during the last few decades.

Some agreement exists on measures to improve the financial situation of forestry, including community forests (e.g. Ott 1994). There is a consensus that more efficient wood utilisation is needed, particularly in building construction. It is widely accepted that promoting timber consumption will improve the economic situation; in this context the 'Charter for Timber' aims to increase per capita timber consumption by 20% within 10 years (BMVEL 2004). As a result of the nationwide forest inventory, a three to four-fold increase in hardwood felling volume in BW is predicted, and consumption of hardwood sawlogs must be increased strongly to match this supply increase and support log prices.

A starting trend is the increased use of timber in energy plants. The shift towards these natural energy sources is strongly supported by the increased oil prices and facilitated by state legislation on renewable energy, which provides financial support for energy produced from renewable sources. At the state level, a specialised subsidy program for establishing wood-chip heating has resulted in construction of about 160 heating plants, mostly as communal facilities. These have a total output of 110 MW (Joos and Deines 2002). About 50% of the energy from renewable sources in BW presently comes from wood (accounting for 1.2% of the of primary energy use in the state). About 200,000 $m^3$ (5% of the total annual cut) is used for this purpose. The goal of the state government is to double the share of renewable energy by 2010, and wood will play an important role.

Community forestry is partially characterised by lower mechanisation and often by a relatively high labour requirement, and in times of job shortages it has a reserve function in employment generation. These circumstances often inhibit technical progress in forestry, and there is a need to increase the financial performance by improved management and control systems. This often requires a change in the views of the local managers and the communal authorities.

During the last 20 years, assiduous efforts have been undertaken to improve the ecological performance of forest enterprises. The emphasis on ecological improvements has reduced to some extent the economic performance and partially results in deficits in economic optimisation and knowledge. In this context, Hartebrodt and Möhring (2004) argued for a more intensive use of existing economic management instruments and information systems.

Community forestry, particularly in or close to dense urban areas, emphasises other forest functions more than timber production. For some decades the 'wake theory' – which asserts that the recreational and ecological functions of forest are more-or-less cost-free additional benefits of the production function of the forest – dominated the discussions. Today, this theory does not appear to be tenable, and attempts are being made to generate returns from recreational and ecological services. One of the most relevant developments is related to the 'Framework Directive in the Field of Water Policy' of the European Union (EU 2000). It seems possible (though not confirmed) that forest owners can receive returns from water suppliers for the improved groundwater quality in forested regions (Merker 2003). There is also some initial success in gaining money for ecological compensatory measures within the forest estates. Given the fact that there will be a future need of areas for housing or industrial estates, forests can be used for ecological compensation operations. The development of economic instruments, which are

needed to place financial values on these ecological measures, is in progress (see Leefken and Möhring 2002).

There is still a lack of unequivocal and accepted management strategies developed in cooperation between the forest administration and the individual community (Ruppert 2004). This strategy must not result in profit maximisation; there is also the possibility to put an emphasis on the social and ecological functions of the forests. Thus strategy can secondarily improve the acceptance by the community representatives and the citizenship of forestry operating deficits (Peichl 2000). It is an open question whether the present financial crisis will result in a turnaround toward profit maximising forestry or whether financial losses will be tolerated to support ecological and recreational benefits.

All primary industries in Germany are facing a long-term cost-price squeeze. While the average timber proceeds (in €/$m^3$) have been decreasing for more than 20 years, the outlays have increased in accordance with the inflation rate. The increase in labour costs in particular is closely related to that in other sectors. Forestry enterprises have undertaken assiduous efforts to reduce their total expenditures in various ways (e.g. natural regeneration, mechanisation), but a comparison between the trends of outlays and proceeds reveals that cost reduction has been insufficient to cover the decreasing timber prices (Figure 6). Most observers expect that there is no possibility to balance this discrepancy during the next decade without generation of new income sources. On a longer timeframe, the increasing importance of renewable resources may result in better economic prospects.

It is difficult to predict the impact of the new form of state forest administration, which commenced in 2005, but some risks are apparent. It is already obvious that there will be great variations in forestry goals and administrational structures between individual counties. The relationship between the single community and the county is ambiguous. On one hand, communities receive many services from the counties; for example, hospital and waste disposal services are mostly organised on the county level. On the other hand, the counties are the supervising authorities for forestry. There is a continuing discussion on establishment of forest offices on the community level, which is in accordance to the *State Forest Act*. Compared to the globalisation in the timber markets, community forestry faces the risk of increasing organisational fragmentation. This may result in a decreasing competitiveness towards the wood consumers and other economic sectors.

The 20% staffing reduction creates a need to reduce the amount of service offers. It is uncertain which parts of forestry will be most affected, and there could be concern that the influence of ‘short time policy’ will increase notably. There is a growing discussion of professional standards, e.g. whether it is necessary that the heads of the forest offices hold a university degree or whether lower education level is sufficient.

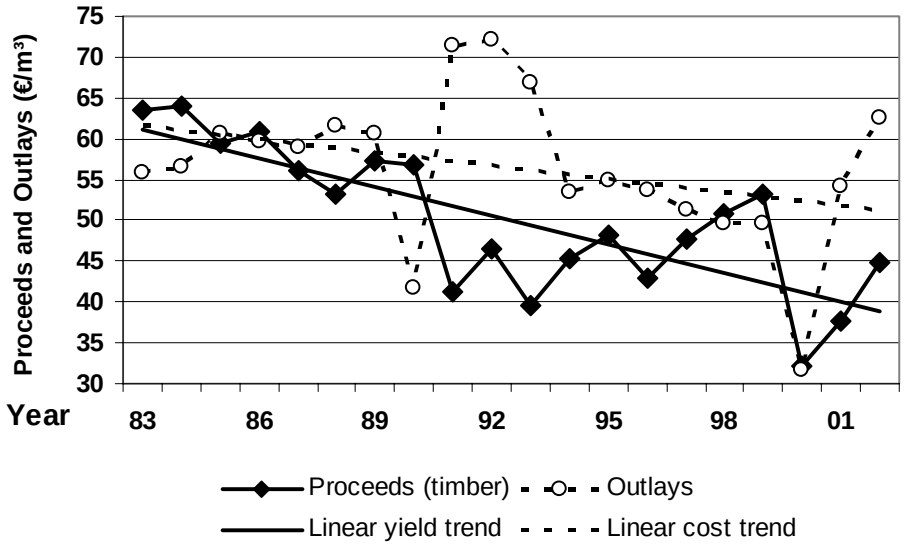



**Figure 6.** Time series and linear trends in forestry proceeds and outlays (€/$m^3$) in community forests

The timber industry in 2003 initiated an anti-trust activity to prevent the joint marketing of timber from the state-owned forest enterprise and the communities. It can be expected that this action will be successful. In fact, it must be expected that either the timber prices will decrease or the increase of the transaction costs will influence the operating result. The market service is one of the most important activities of local (county) government forestry officers. If marketing services are split from the other administrative duties, the maintenance of an integrative administration will be endangered in many counties. Therefore the anti-trust campaign may finally result in loss of the integrative forest administration. There is a risk, as well, that the production of timber will decrease because of the worsening market accessibility of smaller communal forest enterprises. It is obvious that there is a common interest of all types of forest ownership to retain the present situation.

## CONCLUDING COMMENTS

As a result of changes in the socio-economic and political arrangements, community forestry has to develop faster than ever before. These changes are causing considerable uncertainty, and there is no single measure that is able to bring a solution for all aspects. Only a bundle of adapted activities will support a form of forestry which is sustainable in all dimensions. Social, ecological and economic needs must be balanced to secure the maintenance of community forestry under the conditions of a densely populated and industrialised society. At present, the economic situation must be identified as the most crucial dimension. After 20 years of ecologically sound forestry, the development of ecologically and economically feasible solutions is the challenge.

The PuPuP as practiced in BW, plays an important role in the improvement of forestry. The decision to maintain an integrative forest administration, which is presently in terms of intensity more or less unique in Germany, is a logical consequence of the high customer satisfaction and the success of this cooperation. The decrease of state-provided, direct and institutional subsidies seems to be unavoidable given the budget deficits. The intensification of cooperation between forest enterprises is one appropriate strategy to deal with this development. More intensive cooperation between communities is also needed, to bridge structural deficits. In the future only a combination of state-provided and self-organised help will secure high quality forest management.

## REFERENCES

Abel, W. (1962), 'Geschichte der deutschen Landwirtschaft vom frühen Mittelalter, bis zum 19', Jh. Stuttgart.

Bader, K.S. (1957), *Studien zur Rechtsgeschichte des mittelalterlichen Dorfes*, Bd. 1, Das mittelalterliche Dorf als Friedens- und Rechtsbereich, Weimar.

Bader, K.S. (1962), *Studien zur Rechtsgeschichte des mittelalterlichen Dorfes*, Bd. 2, Dorfgenossenschaft und Dorfgemeinschaft, Köln, Graz.

BMI (Bundesministerium des Inneren) (2001), *Moderner Staat - Moderne Verwaltung, Zuständigkeitslockerung – Bundesregierung erweitert Entscheidungsfreiräume*, Arbeitsbericht der Bundesregierung, Berlin, Eigenverlag BMI.

BMVEL (Bundesministerium für Verbraucherschutz, Ernährung und Landwirtschaft) (2004), *Verstärkte Holznutzung – Zugunsten von Klima, Lebensqualität, Innovation und Arbeitsplätzen (Charta für Holz)*, Berlin, Eigenverlag BMVEL.

Boelcke, W.A. (1974), 'Zur Problematik der frühen Landnahme im deutschen Südwesten', in *Wirtschaftliche und soziale Strukturen im säkularen Wandel*, Bd. 1, Schriften für ländliche Sozialfragen, (ed.), Agrarsoziale Gesellschaft, Göttingen, Hannover.

Brandl, H. (1970), *Der Stadtwald von Freiburg*, Eine forst und wirtschaftgeschichtliche Untersuchung über die Beziehungen zwischen Waldnutzung und wirtschaftlicher Entwicklung der Stadt Freiburg vom Mittelalter bis zur Gegenwart, Freiburg.

Brandl, H. (1973), 'Entstehung und Bewirtschaftung von städtischem Waldbesitz in geschichtlicher Entwicklung', dargestellt an Beispielen aus dem süddeutschen Raum, *Allgemeine Forst- und Jagdzeitung*, 144(8): 154-162.

Budäus, D, Grüning, G. and Steenbock, A. (1998), Public Private Partnership III – Theorie der Public Private Partnership, *Public Management – Diskussionsbeiträg*, 34.

Compagnon Marktforschungs-Institut (Compagnon) (1998), *Analyse der Marktsituation und der Kundenzufriedenheit im Holzverkauf*, Auftragsstudie, gefertigt im Auftrag des Ministeriums für Ländlichen Raum, 38 S. mit umfangreichem Grafik- und Tabellenanhang, unveröffentlicht.

Conrad, H. (1954), *Deutsche Rechtsgeschichte*, 2 Bd, Karlsruhe.

Dinkelaker, F.F. (2000), 'Der Gemeindewald in der Kommunalpolitik, Eine Untersuchung am Beispiel des kommunalen Waldbesitzes in Baden-Württemberg', Dissertation am Institut für Forstpolitik der Universität Freiburg, Schriftenreihe Freiburger Forstliche Forschung, Bd. 10.

DFWR (1998), Empfehlungen zur Vereinheitlichung des Forstlichen Rechnungswesens, Deutscher Forstwirtschaftsrat, http://www.dfwr.de/ausderarbeit/empfehlungen.htm.

EU (2000), 'Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000, establishing a framework for community action in the field of water policy', *Official Journal*, L 327, 22/12/2000: 1-73.

EU (2004), *Green Paper on Public-Private Partnerships and Community Law on Public Contracts and Concessions*, COM (2004) 327 final, 30 April 2004, Brussels.

Forstverwaltungs-Kosten-Beitragsgesetz (1994), 'Gesetz über den Forstverwaltungskostenbeitrag der Gemeinden und Sonstigen Körperschaften des öffentlichen Rechts', in der Fassung vom 25 Januar 1994, zuletzt geändert am 08 April 2003, Gesetzblatt für Baden-Württemberg 1994: 138.

FVA (ed.) (2004), 'Testbetriebsnetze der Forstwirtschaft in Baden-Württemberg', Betriebswirtschaftliche Ergebnisse der Waldbesitzarten im FWJ 2001 und 2002, Freiburger Forstliche Forschung, Berichte, Heft 55.

Gröbl, W. (1994), 'Standort und Zukunft des Kommunalwaldes – Sicherung des natürlichen Lebensraumes für die nachfolgenden Generationen', *Forst und Holz*, 49(9) Nr. 16: 437-438.

Grundgesetz (1949), 'Grundgesetz für die Bundesrepublik Deutschland', in der Fassung vom 23.05.1949, *Bundesgesetzblatt* 1, 1949, zuletzt geändert durch Art. 1 G v. 26. 7.2002, BGBl I.

Harrison, S.R, Herbohn J.L. and Niskanen, A. (2002), 'Non-industrial, smallholder, small-scale and family forestry: what's in a name?, *Small-scale Forest Economics, Management and Policy*, 1(1): 1-11.

Hartebrodt, C. (2004a), 'The impact of storm damage on small-scale forest enterprises in the southwest of Germany', *Small-scale Forest Economics, Management and Policy*, 3(2): 203-222.

Hartebrodt, C. (2004b), 'Situation im Bauernwald Baden-Württemberg im Fwj 2003 – Stabile Krise oder in der Krise stabil', *AFZ-DerWald*, Nr. 22/2004: 1193-1195.

Hartebrodt, C. and Möhring, B (2004), 'Wer nicht rechnet hat sich bereits aufgegeben', *AFZ-DerWald*, Nr. 22/2004: 1184-1185.

IMF (2004): International Monetary Funds, *Public-Private Partnerships*, 12 March 2004

Joos, M. and Deines, T. (2002), 'Bedeutung des Holzasche-Kreislaufkonzeptes für die Holzenergieinitiative des Landes Baden-Württemberg', in Proceedings of the FVA-Symposium, *Holzasche-Ausbringung im Wald, ein Kreislaufkonzep*, March 2002, FVA, Freiburg.

Joos, M. and Hartebrodt, C. (2001), 'Kundenzufriedenheit beim Rundholzverkauf – Ergebnisse und erste Umsetzungen im Zuge der Neuorganisation der Landesforstverwaltung Baden-Württemberg', *Holzzentralblatt*, (127)19/2001: 282-283.

Kroeschell, K. (1972, 1973), *Deutsche Rechtsgeschichte*, Bd. 1, bis 1250; Bd. 2, 1250 bis 1650, Reinbeck bei Hamburg.

KWaldVO (1. Körperschaftswaldverordnung) (1978), *Verordnung des Ministeriums für Ernährung Landwirtschaft und Umwelt über die Grundsätze für die Betriebsplanung und Ihren Vollzug im Körperschaftswald*, Gesetzblatt für Baden-Württemberg.

Landesforstverwaltung Baden-Württemberg (LFV) (2004), 'Sturm 'Lothar' – Bewältigung der Sturmschäden in den Wäldern Baden-Württembergs, Dokumentation, Analysen, Konsequenzen', Schriftenreihe der Landesforstverwaltung Bd. 83, Stuttgart.

Landtag von Baden-Württemberg. (2002), Drucksache 13/844, *Große Anfrage der CDU Fraktion und Antwort der Landesregierung*, Situationsbeschreibung, wirtschaftliche Bedeutung und staatliche Förderung der Tourismusbranche in Baden-Württemberg, Eigenverlag (Landtagsdruckerei), Stuttgart.

Leefken, G. and Möhring, B. (2002), 'Wald als Raum für Kompensationsmaßnahmen – Möglichkeiten und betriebliche Perspektiven', *Forst und Holz*, 57(20): 603-608.

LWaldG (Landeswaldgesetz) (1995), 'Waldgesetz für Baden-Württemberg in der Fassung vom 31.08.1995, zuletzt geändert am 19.11.2002', Gesetzblatt für Baden-Württemberg.

Mantel, K. (1933), 'Der Gemeindewald in Bayern', Dissertation an der juristischen Fakultät Würzburg.

Merker, K. (2003), 'Die Wertschöpfungskette Wasser - Neue Chancen für eine Wald-Wasser-Kooperation', *Forst und Holz*, 58(18): 531-536.

MLR (Ministerium Ländlicher Raum) (2004), Pressemitteilung 229/2004, (Besichtigung der im Bau befindlichen Hackschnitzelheizanlage in Schwaigern).

Ott, W. (1994), 'Standort Deutschland – Perspektiven der Forstwirtschaft', *Forst und Holz*, 49(16): 443-445.

Peichl, B. (2000), 'Forstlicher Verbundbetrieb in der kommunalen Haushaltssystematik', *AFZ/DerWald*, 6/2000: 300-302.

Prange, H. (1973), 'Entwicklung und Stand der Forstorganisation der waldbesitzenden Gemeinden, sonstigen öffentlich-rechtlichen Körperschaften und Gemeinschaften in der Bundesrepublik Deutschland', Dissertation an der forstwissenschaftlichen Fakultät der Universität Freiburg.

(PSIRU) Public Services International Research Unit (2004), *Public-public Partnerships in Health and Essential Services*, Equinet Discussion Paper Number 23.

(PSIRU) Public Services International Research Unit (2005), '*PPPs: a Critique of the Green Paper*', a study on behalf of the European Federation of Public Service Unions (EPSU).

Ruppert, C. (2004), 'Gemeinwohlverpflichtung öffentlicher Forstbetriebe - Eine theoretische Problemdarstellung mit Bezug zur Praxis', Arbeitsbericht 38-2004, Institut für Forstökonomie der Universität Freiburg, Eigenverlag Freiburg.

Schaefer, S. (2002), 'Kommunale Forstwirtschaft im Wandel', *AFZ/DerWald*, 23/2002: 1245.

Sekot, W. (1990), Forstliche Testbetriebsnetze, *Schriftenreihe des Instituts für forstliche Betriebswirtschaft und Forstpolitik*, Band 9, Eigenverlag, Wien.

Stenbock, R. and Schaefer, S. (1994), 'Zur Lage und zu Perspektiven der kommunalen Forstwirtschaft', *Forst und Holz*, 49(16): 435-436.

Syncwork 2005: 'Kommunale IT-Dienstleister für den Wettbewerb neu aufstellen', Zusammenfassung einer Studie an der Universität Potsdam und an der Universität St. Gallen.

Verfassung von Baden-Württemberg (1953), in der Fassung vom 11 November 1953, Gesetzblatt für Baden-Württemberg (GBl) S. 173, zuletzt geändert durch Gesetz vom 23 Mai 2000 (GBl S. 449).

Wegener, A. (2003), 'Public Private Partnerships in Großbritannien, Fallstudie Liverpool City Council', Studie im Auftrag des Wissenschaftszentrums für Sozialforschung, GmbH, Berlin.

Wellmer, M. (1938), Zur Entstehungsgeschichte der Markgenossenschaften, Der Vierdörferrat bei Emmendingen', in *Veröffentlichungen des Oberrheinischen Instituts für geschichtliche Landeskunde*, Bd. IV, Freiburg.